

Appendix I

Test Results of LTE Band 7

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1. Test Conditions

Item	Environment	Test Channel	RB size	Modulation	BW (MHz)	Test by
Conducted Output Power	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☒ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 5 ☒ 10 ☒ 15 ☒ 20	Sean
EIRP/ERP	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☒ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 5 ☒ 10 ☒ 15 ☒ 20	Sean
Peak-to-Average Ratio	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☐ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 20	Sean
Occupied Bandwidth	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☐ 1 ☐ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 5 ☒ 10 ☒ 15 ☒ 20	Sean
Conducted Band Edge	☒ N.T / N.V.	☒ Low ☐ Mid ☒ High	☒ 1 ☐ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 5 ☒ 10 ☒ 15 ☒ 20	Sean
Spurious Emission at Antenna Terminal	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☐ Half ☐ Full	☒ QPSK ☒ 16QAM	☒ 20	Sean
Field Strength of Spurious Radiation	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ worst case			Sean
Frequency Stability	☒ N.T / N.V. ☒ L.T / L.V. ☒ L.T / H.V. ☒ H.T / L.V. ☒ H.T / H.V.	☐ Low ☒ Mid ☐ High	☐ 1 ☐ Half ☒ Full	☒ QPSK ☐ 16QAM	☒ 20	Sean

NOTE: All settings for RB allocation, modulation mode, channel, channel bandwidth and environment required by the standard are considered and tested; only the worst case and normal test plots are shown on the report.

2. Conducted Output Power and EIRP

BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	EIRP (dBm)	Limit (dBm)	Result
			Size	Offset					
5.0	QPSK	Low	1	0	22.57	1.70	24.27	33.00	Pass
				12	22.46	1.70	24.16		Pass
				24	22.38	1.70	24.08		Pass
			12	0	22.12	1.70	23.82		Pass
				7	22.61	1.70	24.31		Pass
				13	22.97	1.70	24.67		Pass
			25	0	22.85	1.70	24.55		Pass
		Mid	1	0	22.63	1.70	24.33		Pass
				12	22.96	1.70	24.66		Pass
				24	23.04	1.70	24.74		Pass
			12	0	22.71	1.70	24.41		Pass
				7	22.69	1.70	24.39		Pass
				13	22.51	1.70	24.21		Pass
			25	0	22.70	1.70	24.40		Pass
		High	1	0	21.96	1.70	23.66		Pass
				12	22.84	1.70	24.54		Pass
				24	22.70	1.70	24.40		Pass
			12	0	22.91	1.70	24.61		Pass
				7	22.53	1.70	24.23		Pass
				13	23.09	1.70	24.79		Pass
			25	0	22.58	1.70	24.28		Pass
	16QAM	Low	1	0	22.19	1.70	23.89	33.00	Pass
				12	22.32	1.70	24.02		Pass
				24	22.40	1.70	24.10		Pass
			12	0	22.89	1.70	24.59		Pass
				7	22.77	1.70	24.47		Pass
				13	22.64	1.70	24.34		Pass
			25	0	22.53	1.70	24.23		Pass
		Mid	1	0	22.20	1.70	23.90		Pass
				12	22.19	1.70	23.89		Pass
				24	22.34	1.70	24.04		Pass
			12	0	22.28	1.70	23.98		Pass
				7	22.69	1.70	24.39		Pass
				13	22.81	1.70	24.51		Pass
			25	0	22.75	1.70	24.45		Pass
		High	1	0	22.43	1.70	24.13		Pass
				12	22.54	1.70	24.24		Pass
				24	22.83	1.70	24.53		Pass
			12	0	22.75	1.70	24.45		Pass
				7	22.16	1.70	23.86		Pass
				13	22.71	1.70	24.41		Pass
			25	0	21.79	1.70	23.49		Pass

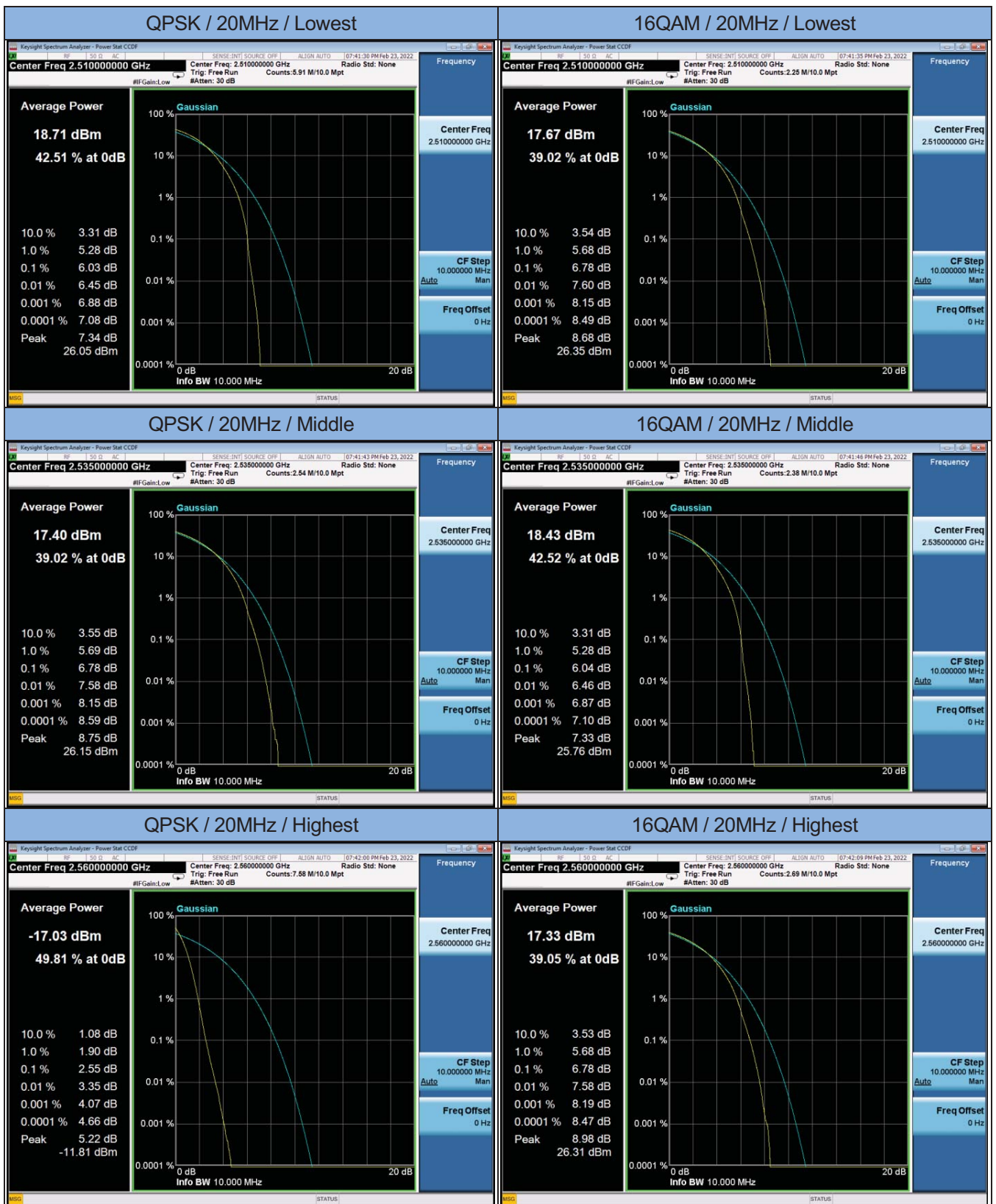
BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	EIRP (dBm)	Limit (dBm)	Result
			Size	Offset					
10	QPSK	Low	1	0	21.67	1.70	23.37	33.00	Pass
				25	22.03	1.70	23.73		Pass
				49	21.89	1.70	23.59		Pass
			25	0	22.32	1.70	24.02		Pass
				12	22.47	1.70	24.17		Pass
				25	21.65	1.70	23.35		Pass
			50	0	21.93	1.70	23.63		Pass
		Mid	1	0	22.07	1.70	23.77		Pass
				25	22.58	1.70	24.28		Pass
				49	22.13	1.70	23.83		Pass
			25	0	22.70	1.70	24.40		Pass
				12	21.96	1.70	23.66		Pass
				25	21.83	1.70	23.53		Pass
			50	0	21.44	1.70	23.14		Pass
		High	1	0	22.09	1.70	23.79		Pass
				25	22.92	1.70	24.62		Pass
				49	23.11	1.70	24.81		Pass
			25	0	21.78	1.70	23.48		Pass
				12	21.69	1.70	23.39		Pass
				25	22.05	1.70	23.75		Pass
			50	0	22.34	1.70	24.04		Pass
	16QAM	Low	1	0	22.13	1.70	23.83	33.00	Pass
				25	22.96	1.70	24.66		Pass
				49	22.14	1.70	23.84		Pass
			25	0	22.32	1.70	24.02		Pass
				12	22.73	1.70	24.43		Pass
				25	22.50	1.70	24.20		Pass
			50	0	22.64	1.70	24.34		Pass
		Mid	1	0	22.41	1.70	24.11		Pass
				25	22.55	1.70	24.25		Pass
				49	22.16	1.70	23.86		Pass
			25	0	22.13	1.70	23.83		Pass
				12	22.50	1.70	24.20		Pass
				25	22.12	1.70	23.82		Pass
			50	0	22.67	1.70	24.37		Pass
		High	1	0	22.71	1.70	24.41		Pass
				25	22.65	1.70	24.35		Pass
				49	22.86	1.70	24.56		Pass
			25	0	22.52	1.70	24.22		Pass
				12	22.90	1.70	24.60		Pass
				25	22.71	1.70	24.41		Pass
			50	0	21.99	1.70	23.69		Pass

BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	EIRP (dBm)	Limit (dBm)	Result
			Size	Offset					
15	QPSK	Low	1	0	21.80	1.70	23.50	33.00	Pass
				37	22.12	1.70	23.82		Pass
				74	22.05	1.70	23.75		Pass
			36	0	21.96	1.70	23.66		Pass
				20	21.71	1.70	23.41		Pass
				39	21.53	1.70	23.23		Pass
			75	0	21.22	1.70	22.92		Pass
		Mid	1	0	21.79	1.70	23.49		Pass
				37	22.14	1.70	23.84		Pass
				74	22.63	1.70	24.33		Pass
			36	0	22.80	1.70	24.50		Pass
				20	22.59	1.70	24.29		Pass
				39	22.37	1.70	24.07		Pass
			75	0	22.18	1.70	23.88		Pass
		High	1	0	21.95	1.70	23.65		Pass
				37	21.73	1.70	23.43		Pass
				74	21.56	1.70	23.26		Pass
			36	0	21.40	1.70	23.10		Pass
				20	21.87	1.70	23.57		Pass
				39	21.45	1.70	23.15		Pass
			75	0	21.66	1.70	23.36		Pass
	16QAM	Low	1	0	21.71	1.70	23.41	33.00	Pass
				37	21.80	1.70	23.50		Pass
				74	21.54	1.70	23.24		Pass
			36	0	21.31	1.70	23.01		Pass
				20	21.27	1.70	22.97		Pass
				39	21.50	1.70	23.20		Pass
			75	0	21.76	1.70	23.46		Pass
		Mid	1	0	21.63	1.70	23.33		Pass
				37	21.01	1.70	22.71		Pass
				74	21.76	1.70	23.46		Pass
			36	0	21.53	1.70	23.23		Pass
				20	21.80	1.70	23.50		Pass
				39	21.23	1.70	22.93		Pass
			75	0	21.67	1.70	23.37		Pass
		High	1	0	21.35	1.70	23.05		Pass
				37	21.88	1.70	23.58		Pass
				74	21.61	1.70	23.31		Pass
			36	0	21.59	1.70	23.29		Pass
				20	21.68	1.70	23.38		Pass
				39	21.30	1.70	23.00		Pass
			75	0	21.47	1.70	23.17		Pass

BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	EIRP (dBm)	Limit (dBm)	Result
			Size	Offset					
20	QPSK	Low	1	0	22.01	1.70	23.71	33.00	Pass
				49	21.57	1.70	23.27		Pass
				99	21.20	1.70	22.90		Pass
			50	0	22.03	1.70	23.73		Pass
				24	21.46	1.70	23.16		Pass
				50	21.81	1.70	23.51		Pass
			100	0	22.09	1.70	23.79		Pass
		Mid	1	0	21.73	1.70	23.43		Pass
				49	21.56	1.70	23.26		Pass
				99	22.27	1.70	23.97		Pass
			50	0	21.82	1.70	23.52		Pass
				24	21.69	1.70	23.39		Pass
				50	21.56	1.70	23.26		Pass
			100	0	21.37	1.70	23.07		Pass
		High	1	0	21.02	1.70	22.72		Pass
				49	20.99	1.70	22.69		Pass
				99	21.75	1.70	23.45		Pass
			50	0	22.05	1.70	23.75		Pass
				24	21.53	1.70	23.23		Pass
				50	21.10	1.70	22.80		Pass
			100	0	21.79	1.70	23.49		Pass
	16QAM	Low	1	0	21.25	1.70	22.95	33.00	Pass
				49	21.94	1.70	23.64		Pass
				99	22.02	1.70	23.72		Pass
			50	0	21.56	1.70	23.26		Pass
				24	21.33	1.70	23.03		Pass
				50	21.78	1.70	23.48		Pass
			100	0	21.60	1.70	23.30		Pass
		Mid	1	0	21.24	1.70	22.94		Pass
				49	21.61	1.70	23.31		Pass
				99	21.52	1.70	23.22		Pass
			50	0	21.47	1.70	23.17		Pass
				24	21.60	1.70	23.30		Pass
				50	21.58	1.70	23.28		Pass
			100	0	21.49	1.70	23.19		Pass
		High	1	0	21.35	1.70	23.05		Pass
				49	21.20	1.70	22.90		Pass
				99	21.68	1.70	23.38		Pass
			50	0	21.19	1.70	22.89		Pass
				24	21.72	1.70	23.42		Pass
				50	21.26	1.70	22.96		Pass
			100	0	21.70	1.70	23.40		Pass

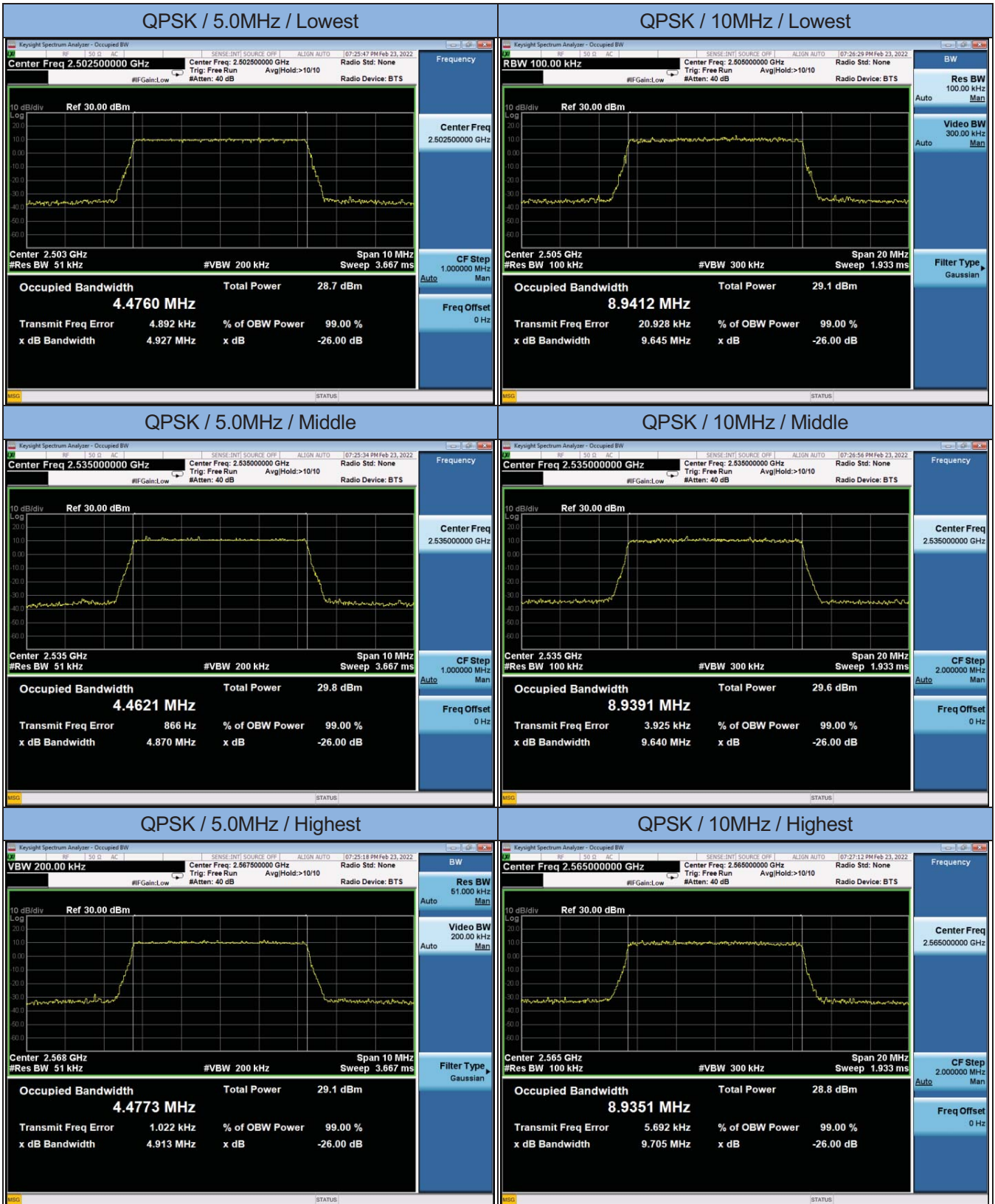
3. Peak-to-Average Ratio

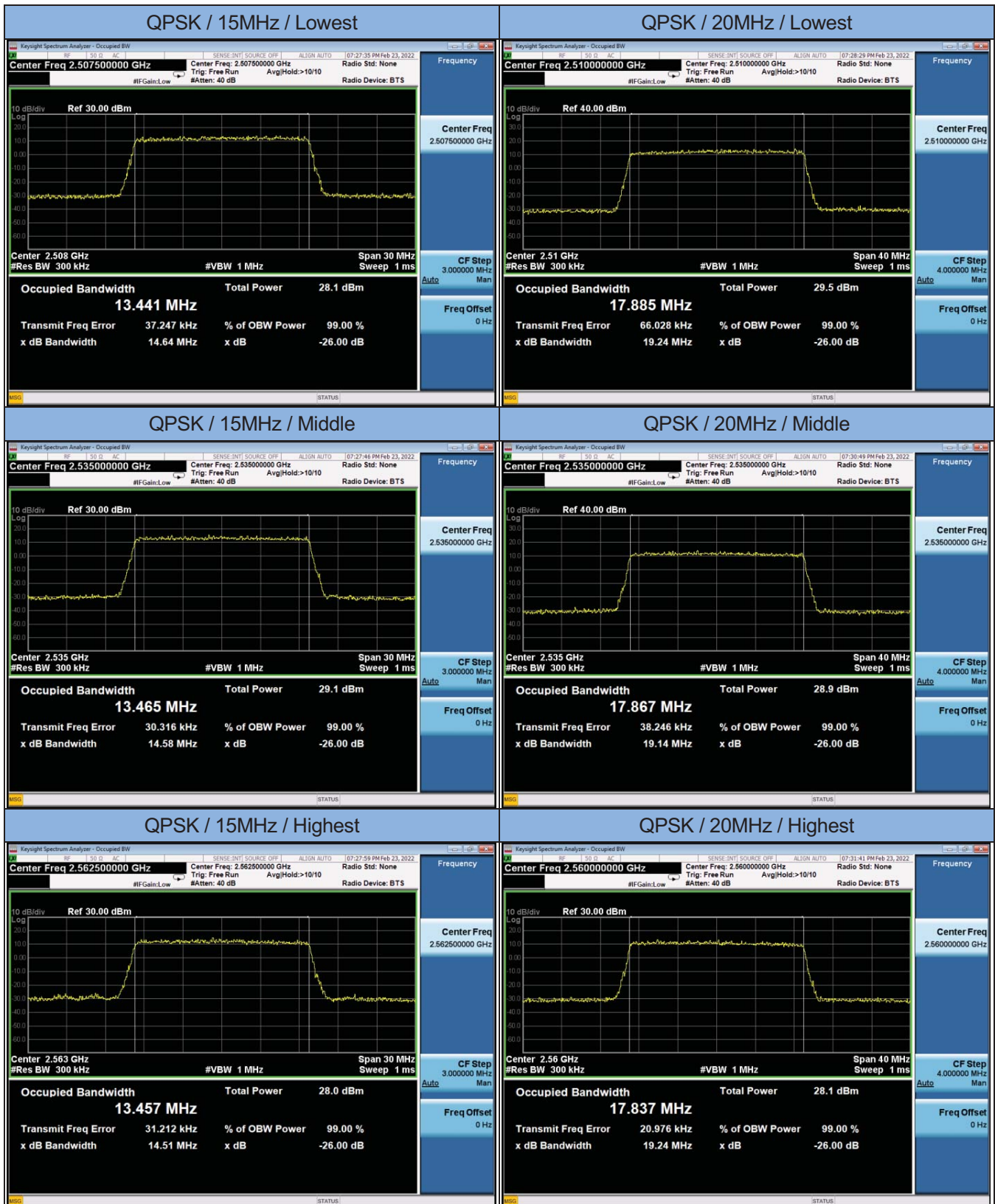
BW (MHz)	Modulation	Channel	RB Allocation		Peak-to-Average Ratio (dB)	Limit (dBm)	Result
			Size	Offset			
20	QPSK	Low	Full	0	6.03	13.0	Pass
		Mid	Full	0	6.78		Pass
		High	Full	0	2.55		Pass
	16QAM	Low	Full	0	6.78	13.0	Pass
		Mid	Full	0	6.04		Pass
		High	Full	0	6.78		Pass



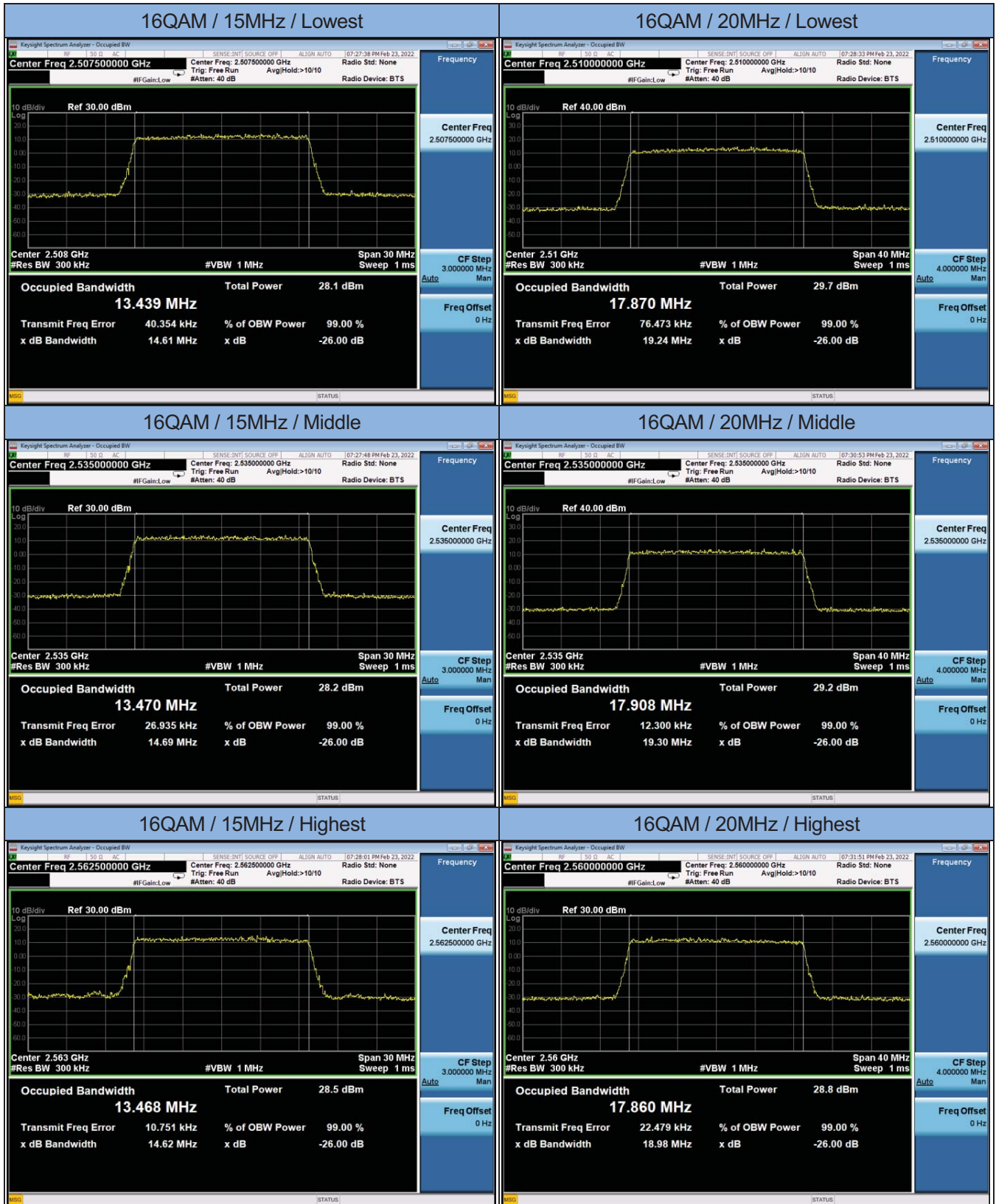
4. Occupied Bandwidth

BW (MHz)	Modulation	Channel	RB Allocation		26dB BW (MHz)	99% OBW (MHz)	Limit (dBm)	Result
			Size	Offset				
5.0	QPSK	Low	Full	0	4.927	4.4760	---	Pass
		Mid	Full	0	4.870	4.4621		Pass
		High	Full	0	4.913	4.4773		Pass
	16QAM	Low	Full	0	4.941	4.4777	---	Pass
		Mid	Full	0	4.873	4.4637		Pass
		High	Full	0	4.884	4.4663		Pass
10	QPSK	Low	Full	0	9.645	8.9412	---	Pass
		Mid	Full	0	9.640	8.9391		Pass
		High	Full	0	9.705	8.9351		Pass
	16QAM	Low	Full	0	9.660	8.9418	---	Pass
		Mid	Full	0	9.680	8.9310		Pass
		High	Full	0	9.622	8.9404		Pass
15	QPSK	Low	Full	0	14.64	13.441	---	Pass
		Mid	Full	0	14.58	13.465		Pass
		High	Full	0	14.51	13.457		Pass
	16QAM	Low	Full	0	14.61	13.439	---	Pass
		Mid	Full	0	14.69	13.470		Pass
		High	Full	0	14.62	13.468		Pass
20	QPSK	Low	Full	0	19.24	17.885	---	Pass
		Mid	Full	0	19.14	17.867		Pass
		High	Full	0	19.24	17.837		Pass
	16QAM	Low	Full	0	19.24	17.870	---	Pass
		Mid	Full	0	19.30	17.908		Pass
		High	Full	0	18.98	17.860		Pass

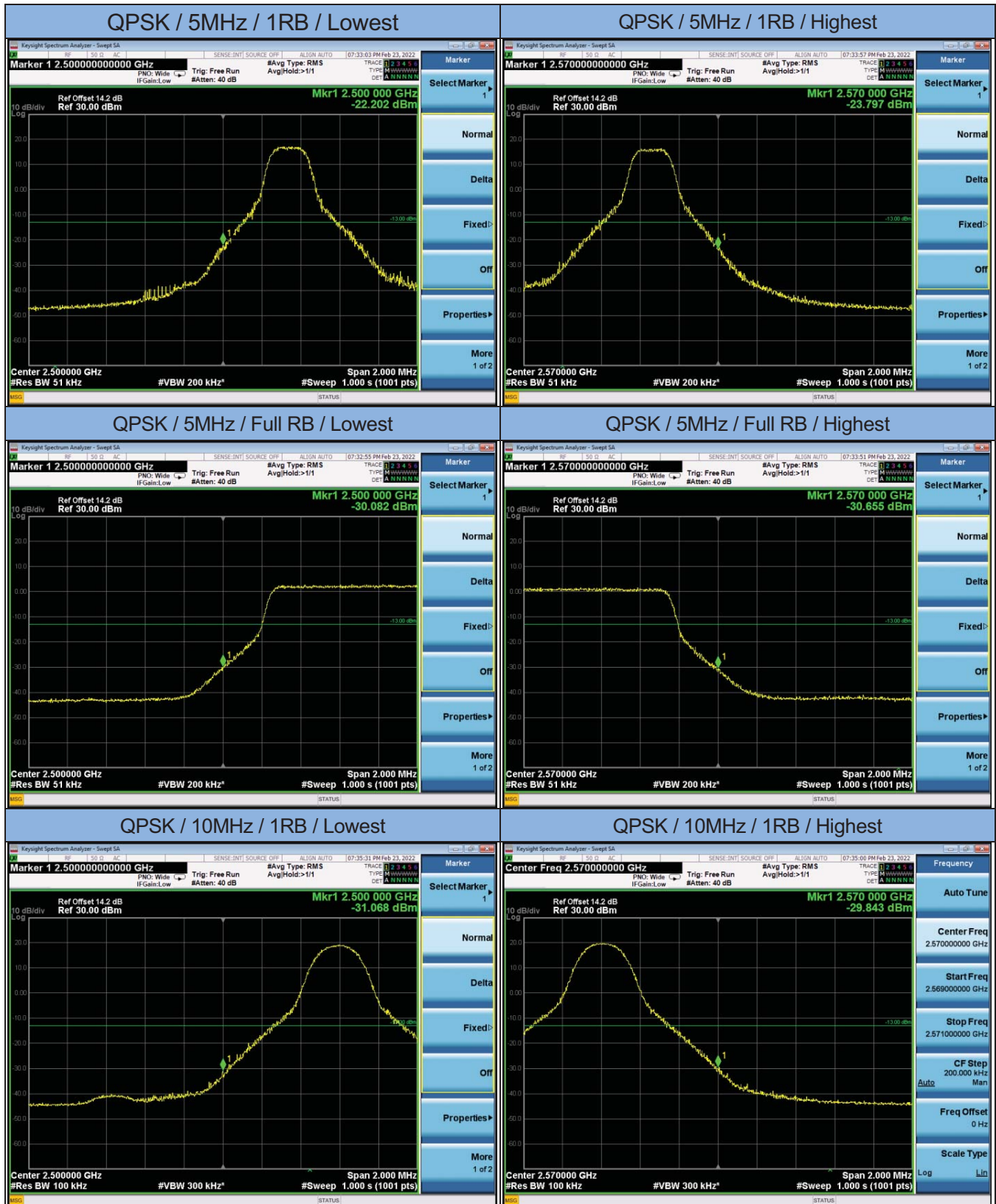


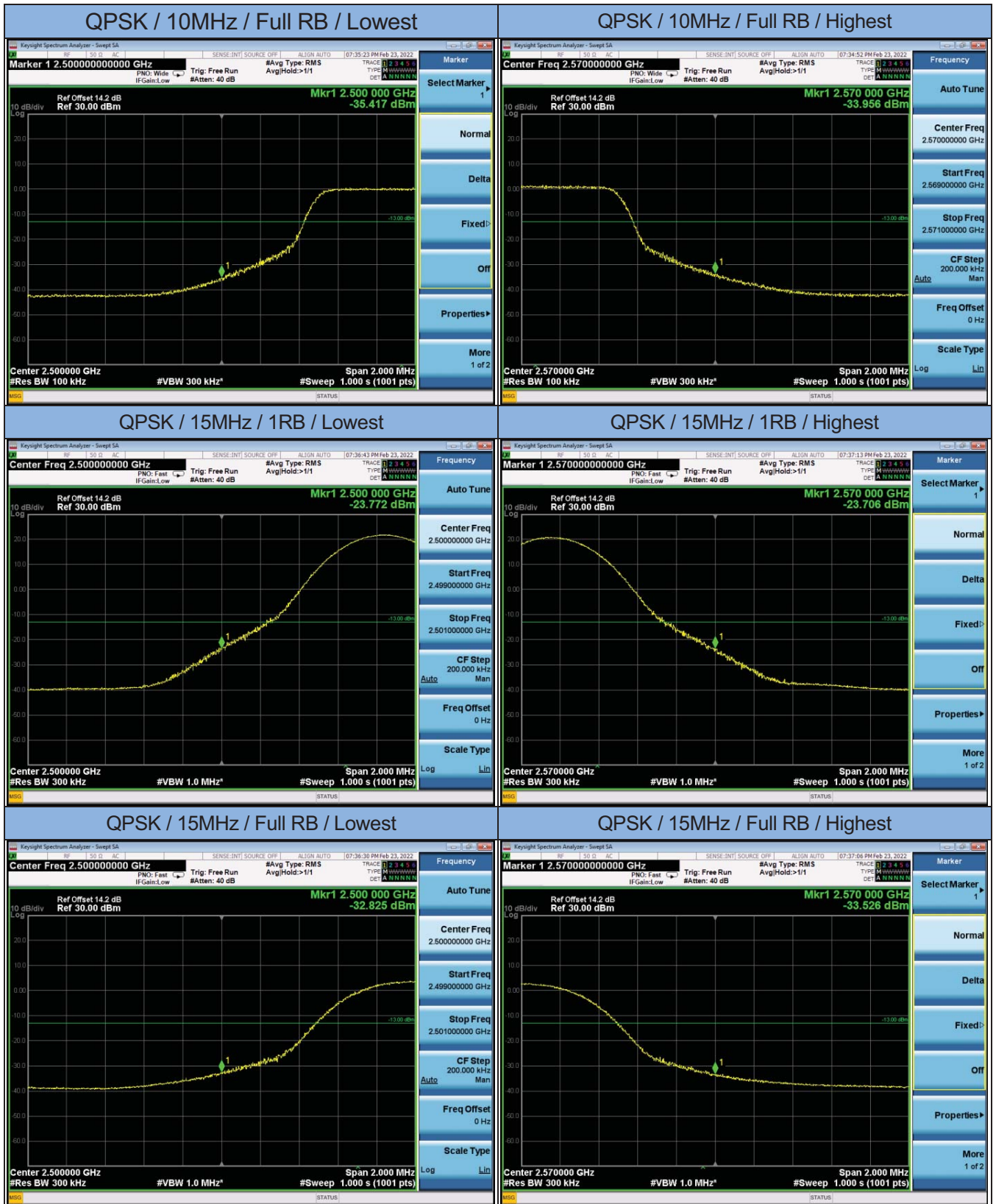


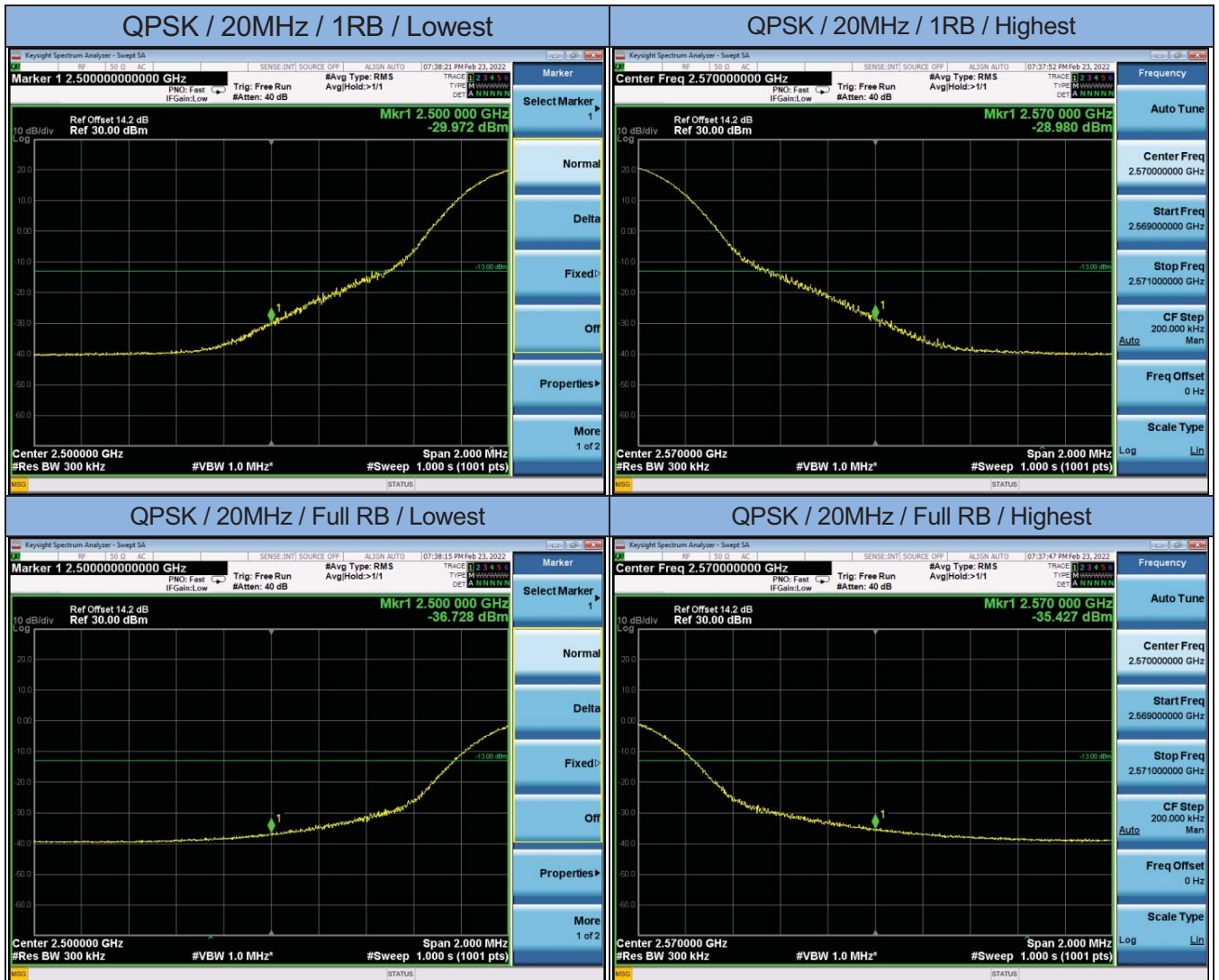


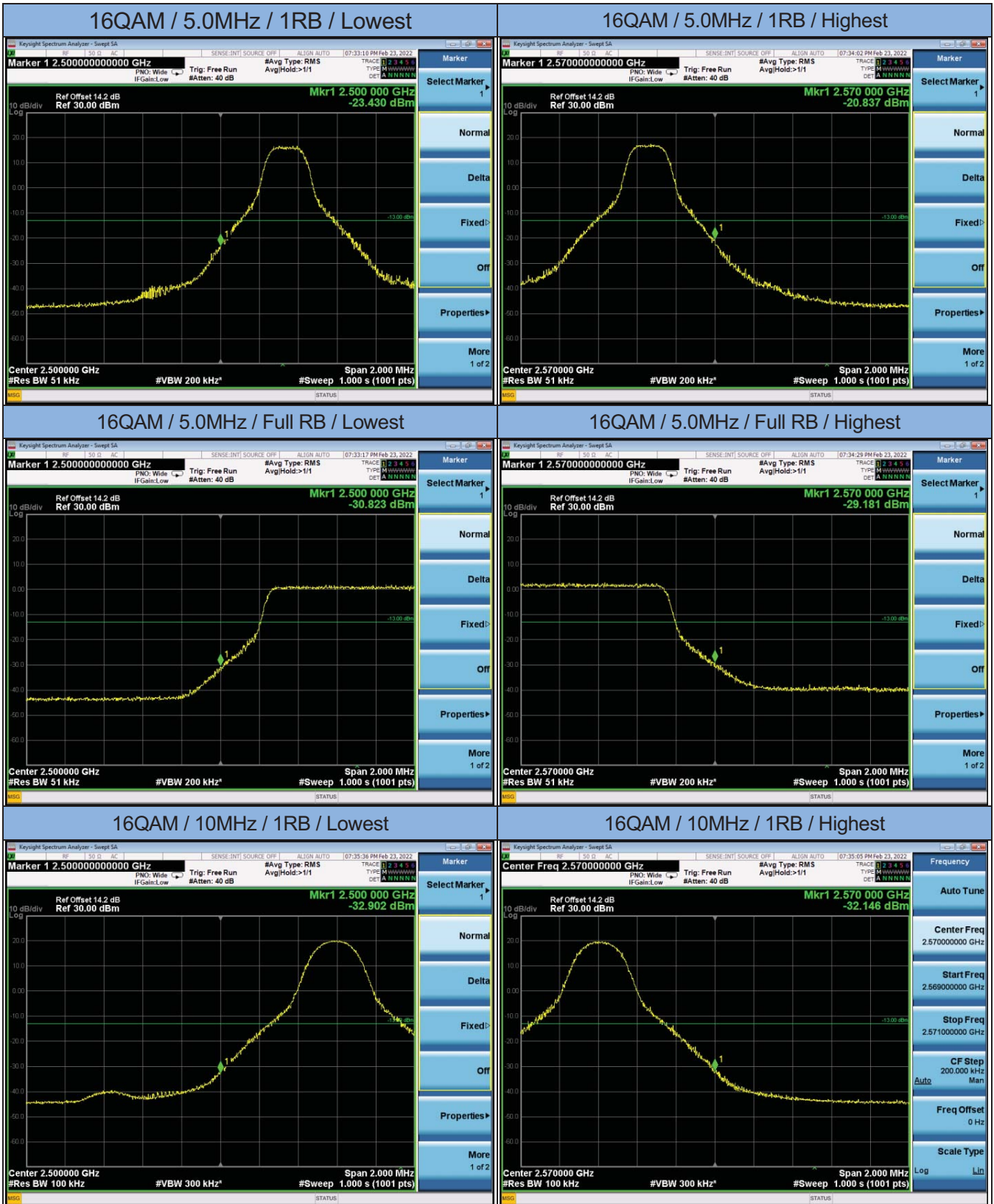


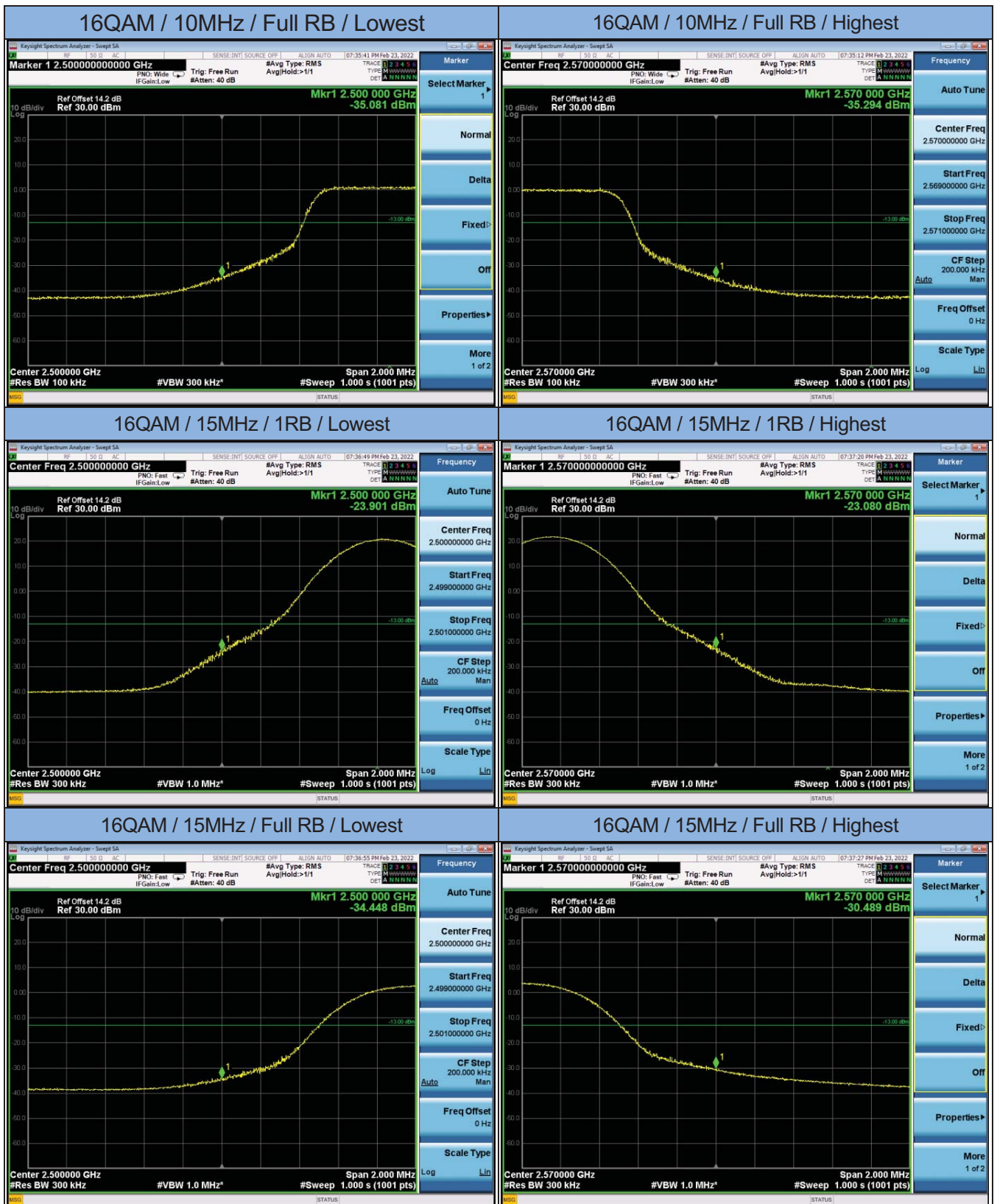
5. Band Edge

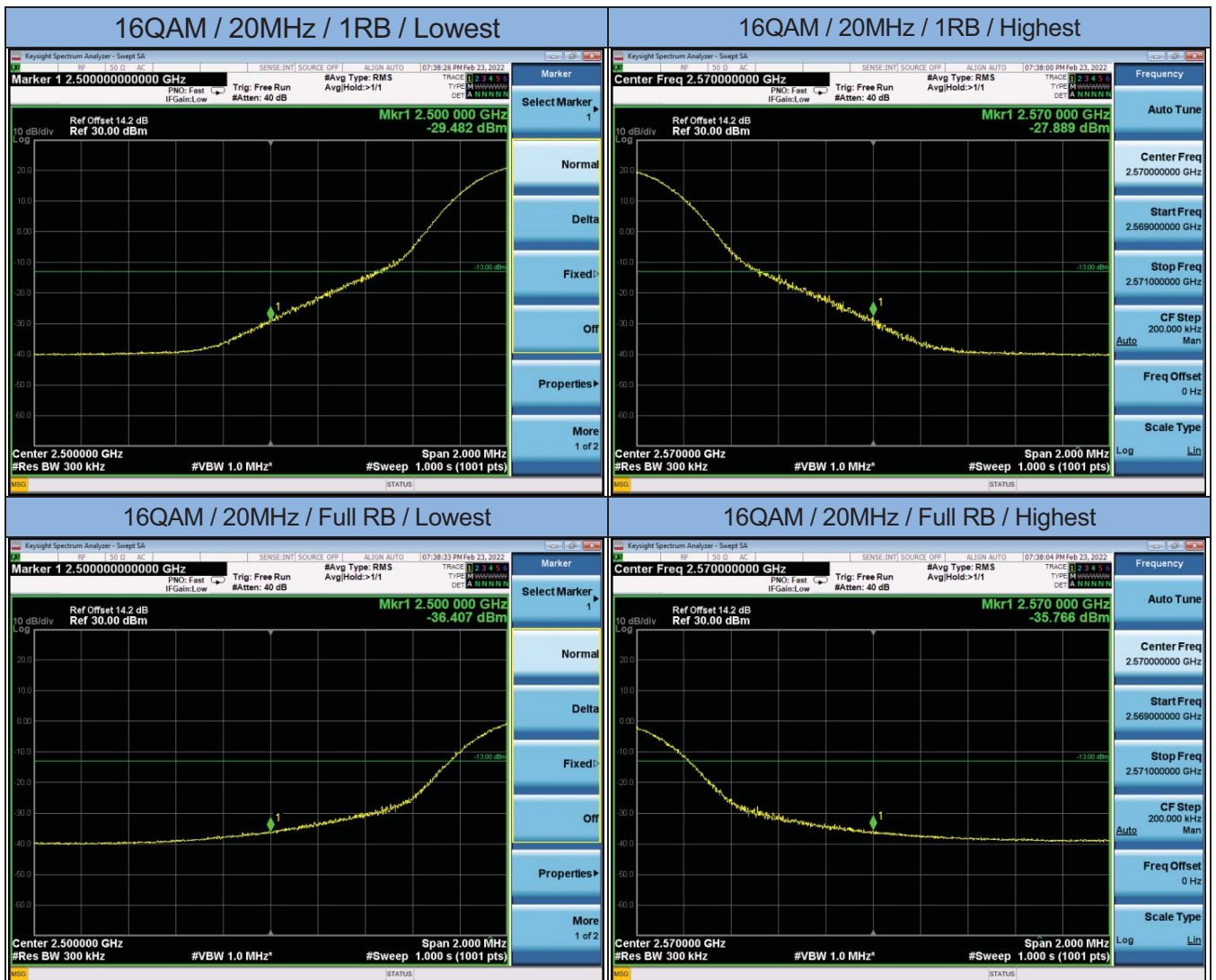




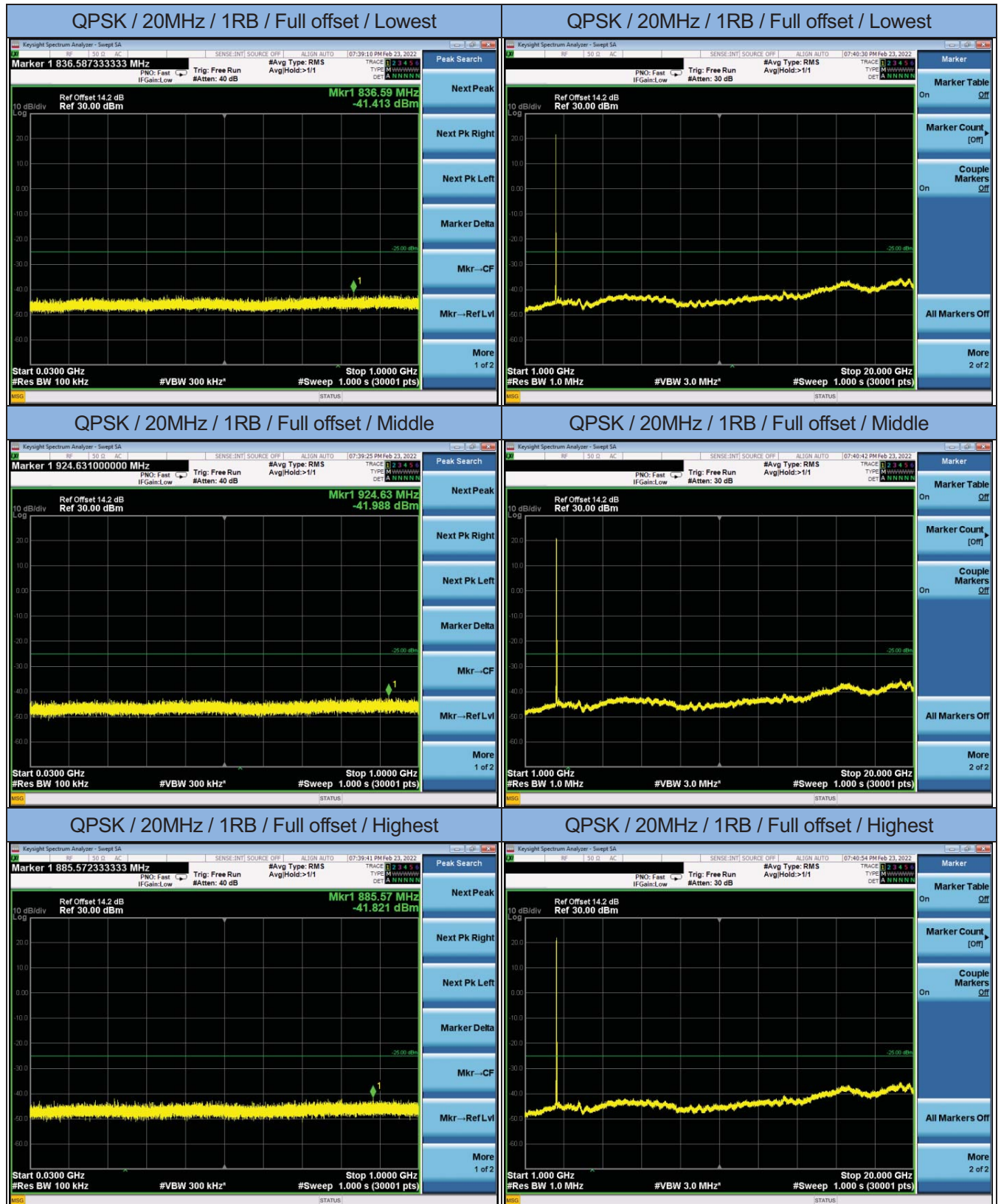


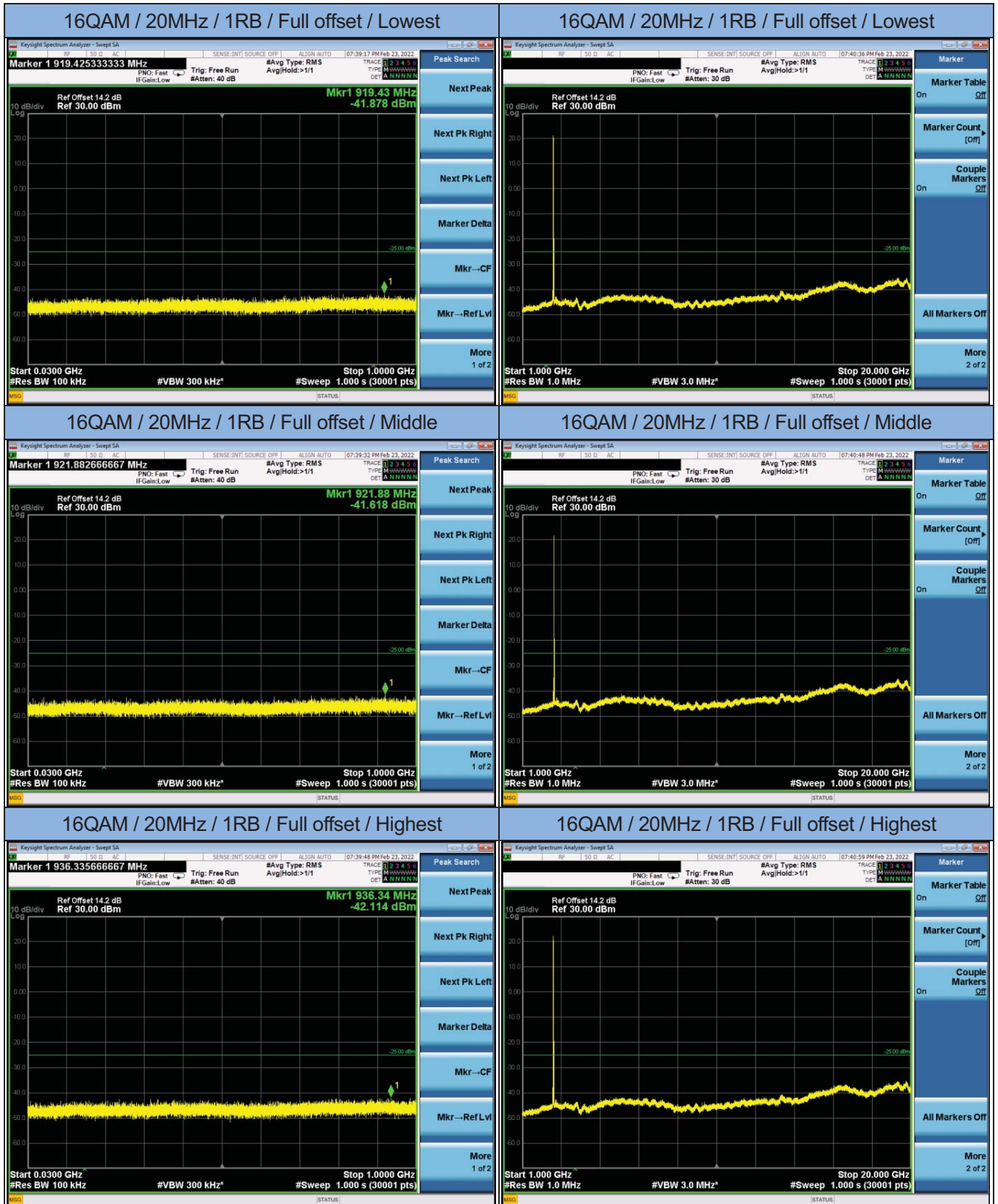






6. Transmitter Spurious Emissions





7. Field Strength of Spurious Radiation

LTE Band 7 / 20M / QPSK					
Channel	Frequency (MHz)	Polarization (H/V)	Meas. Level (dBm)	Limit (dBm)	Margin (dBm)
Lowest	652.44	H	-53.95	-13	-40.95
	5020	H	-45.83	-13	-32.83
	7530	H	-36.29	-13	-23.29
	10040	H	-48.45	-13	-35.45
	654.68	V	-65.12	-13	-52.12
	5070	V	-46.11	-13	-33.11
	7605	V	-38.04	-13	-25.04
	10140	V	-49.70	-13	-36.70
Middle	652.69	H	-54.98	-13	-41.98
	5070	H	-44.51	-13	-31.51
	7605	H	-35.07	-13	-22.07
	10140	H	-47.40	-13	-34.40
	654.20	V	-65.18	-13	-52.18
	5070	V	-47.31	-13	-34.31
	7605	V	-37.28	-13	-24.28
	10140	V	-49.95	-13	-36.95
Highest	652.78	H	-53.60	-13	-40.60
	5120	H	-44.20	-13	-31.20
	7680	H	-35.96	-13	-22.96
	10240	H	-47.48	-13	-34.48
	654.99	V	-65.50	-13	-52.50
	5120	V	-46.64	-13	-33.64
	7680	V	-38.57	-13	-25.57
	10240	V	-49.02	-13	-36.02

8. Frequency Stability

LTE Band 7 / 20M / QPSK / Full RB					
Middle channel, $f_o = 2535.0$ MHz					
Temperature (°C)	Power Supplied (Vdc)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (dBm)	Result
-30	12	-1.9	-0.000750	±2.5	PASS
-20		1.7	0.000671	±2.5	PASS
-10		2.2	0.000868	±2.5	PASS
0		0.9	0.000355	±2.5	PASS
20		-1.8	-0.000710	±2.5	PASS
30		0.6	0.000237	±2.5	PASS
40		-2.7	-0.001065	±2.5	PASS
50		1.9	0.000750	±2.5	PASS
20	10.8	1.5	0.000592	±2.5	PASS
	52.8	1.1	0.000434	±2.5	PASS

---End---